

Appln. No. 09/867,197
Amendment dated January 31, 2005
Regarding Office Action dated October 29, 2004
Docket No. 6169-250

IBM Docket No. BOC9-2001-0015

REMARKS/ARGUMENTS

These remarks are offered in response to the Office Action of October 29, 2004 (Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due.

As a preliminary matter, Applicants wish to thank the Examiner for a thorough review of the instant application. Applicants note that the present claim rejections are based upon different grounds than the previous rejection and based upon different art. Applicants assume from the second office action citing new art and new grounds, that the argument provided in response to the first office action was found to be persuasive.

In paragraphs 1-2, the Examiner has rejected claims 1-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,855,000 to Waibel, *et al.* (Waibel).

Prior to addressing the rejections to the claims, a brief review of the Applicants' claimed invention may be helpful. According to the Applicants' claimed invention, in cases where a likelihood exists that a speech recognition result does not accurately reflect a received user spoken utterance, the user can be asked to choose a correct recognition result from one or more empirically determined alternative word candidates. Empirically determined alternate word candidates can be one or more characters, words, or phrases which are determined from an analysis of dictated text as compared to the recognized dictated text from the speech recognition system. In one embodiment, each of the alternate word candidates presented can be those candidates exceeding a previously established likelihood threshold. When no alternative candidates exceed this previously established threshold, it can be determined that no viable alternative word candidates have been derived for the received input, as noted from page 13, lines 13-25.

Thus, the Applicants' invention teaches that results from a speech recognition system are to be accepted as accurate whenever they exceed an established accuracy threshold. When the result does not exceed this threshold, likely alternative candidates can be automatically presented to the user. Hence, instead of asking the user to repeat the

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last utterance, or stating that a misrecognition event occurred, the invention enables a speech recognition system to function in a human-like manner by presenting the user with empirically determined alternate word candidates, as noted by page 4, lines 9-18.

Waibel teaches a method and apparatus of repairing speech-recognition output generated from a primary user input signal (speech utterance) received through a microphone 22 using a second user input signal received through another input device 24, where the second input signal is processed by a correction and repair module 12. That is, Waibel teaches the repairing of output generated by a recognition engine using a correction and repair module 12, as noted by column 3, lines 17-20. The correction and repair module 12 can accept input from an input device 24 other than the input electronics 23 that provide the input to the speech recognition engine 16. The input device 24 can be a touch sensitive pad or other input transducer, as noted by column 5, lines 54-56. The input device 24 can accept speech input used to direct the correction and repair module 12.

Waibel fails to provide teachings of presenting the user with empirically determined alternate word candidates, as explicitly admitted by the Examiner in paragraph 3 of the Office action. Waibel provides no teachings that a speech processing application is to take any type of automatic action based upon whether a speech-recognition confidence score associated with a favored result from an n-best list exceeds a designated threshold or not. Waibel, thus, is unrelated to the Applicants claimed invention.

Moreover, Waibel's teachings are incompatible and teach away from the Applicants' claimed invention. That is, Waibel's teachings depend on a comparison of recognition results from two independent user inputs, one from device 22 the other from device 24. Without this second input, Waibel's teachings are meaningless and cannot be applied. For example, Waibel's correction and repair module 12 that relies upon the second input cannot be utilized without a second input.

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The Applicants' claimed invention explicitly depends only upon a single user input, one single recognition event against the user input, plus an empirically determined alternatives list. Advantages achieved by the Applicants' claimed invention, such as automatically prompting a user with alternative candidates, are premised upon the ability of the Applicants' invention to operate against a single user input. Thus, Waibel teaches away from the Applicants' claimed invention.

Applicants note that any proposed modification to teachings of prior art cannot render the prior art unsatisfactory for its intended purpose. Applicants further note that the proposed modifications to Waibel that cause Waibel to be modified to rely upon one instead of two user inputs would render Waibel unsatisfactory for its intended purpose. Consequently, the proposed modifications to Waibel are improper for 35 U.S.C. § 103(a) purposes, and should thus be withdrawn, which action is respectfully requested.

Additionally, Applicants note that a proposed modification cannot change the principle of operation of a reference. Since the proposed modification of Waibel changes the principle of operation of Waibel, which requires two distinct user inputs, the modifications are again improper for 35 U.S.C. § 103(a) purposes, and should thus be withdrawn on this basis as well, which action is respectfully requested.

Even though the Applicants have already shown why Waibel is an improper reference to be used against the Applicants' claimed invention and why it is improper to modify Waibel as suggested by the Examiner, the Applicants shall now show that Waibel fails to explicitly or implicitly teach each claimed aspect of the Applicants' invention.

Turning to the rejections of the claims, referring to claims 1 and 11, Applicants claim the steps of:

determining a recognition result for received user speech, said
recognition result comprising recognized text and a corresponding
confidence score;

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comparing said confidence score corresponding to said recognition result to a predetermined minimum threshold; and

if said confidence score does not exceed said predetermined minimum threshold, presenting said user with at least one empirically determined alternate word candidate corresponding to said recognition result.

The Examiner acknowledges that Waibel fails to teach the step of presenting an alternative word list. Not only are such teachings absent from Waibel, but such teachings contradict the purpose and principle of operation of Waibel, as noted earlier.

Despite this inconsistency, the Examiner has taken Official Notice that one of ordinary skill in the art would know that alternate word lists are usually displayed when there is a problem with the recognized result. The Examiner uses this Officially Noticed proposition to modify the teachings of Waibel based upon a supposed level of skill in the art. Applicants note from MPEP section 2143.01 (citing *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999)) that the level of skill in the art cannot be relied upon to provide the suggestion to combine references. Applicants assert that no proper motivation exists to modify the teachings of Waibel as proposed.

Moreover, the Examiner provides no support for the Officially Noticed proposition. The Applicants are aware of no teachings in the field of speech recognition which pre-date the Applicants' invention, which teach this claimed aspect of the Applicant's invention. Instead, conventional teachings contradict this Officially Noticed proposition, to respond to a misrecognition event by informing a user that the last spoken utterance was not understood or to ask the user to repeat the last utterance, as noted by page 7, lines 18-22. This conventional approach was further stated at column 2, lines 60-63 of Waibel.

Additionally, conventional teachings required a user to indicate that a misrecognition event occurred, and did not determine the misrecognition even based on a

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comparison of a confidence score with an established threshold as claimed above. This conventional approach was stated at column 3, lines 6-8 of Waibel, which provided extensions to teachings regarding acceptable types of user indications, as shown by claims 1-113 of Waibel.

Consequently, Applicants respectfully request that the Examiner either provide references supporting the Officially Noticed proposition or that the Examiner withdraw the Officially Noticed proposition.

Regarding claims 2 and 12, the Examiner cites column 2, lines 1-5 of Waibel for teaching that a user can pick a correct recognition result from the displayed results. The cited passage provides no such teachings and instead discusses dictation recognition systems in general. Waibel fails to teach or suggest, as noted from claim 1, presenting alternative word candidates to a user. Waibel further fails to teach or suggest picking one of these (not presented) alternative word candidates.

Regarding claims 3, 4, 13, and 14 the Examiner references Brown for the first time as a basis for rejecting these claims. Applicants assume that Brown was asserted in error as Brown is not referenced as a basis for the rejections of the present Office Action. Brown was, however, cited in the last office action. Applicants respectfully request that either the Examiner withdraw the Brown reference which is believed to be erroneously asserted, or that the Examiner respond to the Applicants' previous argument regarding Brown, which the Examiner stated was moot in paragraph 1 due to the newly cited Waibel reference.

Regarding to claims 7 and 17, the Examiner acknowledges that Waibel fails to teach or suggest that an alternate word candidate is presented in a graphical form. The Examiner takes Official Notice of this proposition, without providing support for the Official Notice. Applicants are not aware of conventional teachings of presenting the alternate candidate as defined in the present context in a graphical form and respectfully

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request that the Examiner either provide references supporting the Officially Noticed proposition or that the Examiner withdrawal the Officially Noticed proposition..

Regarding claims 8 and 18, the Examiner has already admitted that Waibel fails to show presenting a user with an alternative word candidate, from claim 1. The Examiner cites FIG. 1, item 26 and column 10 as teaching an audio user interface for presenting alternate word candidates. FIG. 1, item 26 illustrates a screen of a computer that interacts with the correction and repair module 12. Column 10 details a uni-modal repair example that specifies repair steps performed within the correction and repair module 12. This repair example fails to teach the limitation of presenting a user with the n-best list in any fashion, through an audio interface or otherwise. Applicants respectfully request a clarification of the citations against claims 8 and 18.

The limitations of claims 6, 16, 9, and 19 are not addressed by the Examiner, nor are they taught or suggested by Waibel.

Likewise, independent claims 10 and 20 and limitations thereof are not addressed. The Examiner did not shown how these limitations are taught or suggested by Waibel. In analyzing the Waibel reference, Waibel fails to teach or suggest the limitation of specifying a character in the determining step of claims 10 and 20 as well as the limitations of the comparing and presenting steps of claims 10 and 20.

In summary, Applicants have shown how modifying the Waibel reference in the manner suggested is improper for purposes of U.S.C. §103(a). Further, Applicants have shown that the claimed limitation of presenting empirically determined alternate word candidates responsive to the confidence score not exceeding a predetermined minimum threshold is not taught explicitly or implicitly by Waibel. Applicants therefore respectfully request the withdrawal of the U.S.C. §103(a) rejections to claims 1-20.

In light of the above, Applicants believe that this application is now in full condition for allowance. Allowance is therefore respectfully requested.

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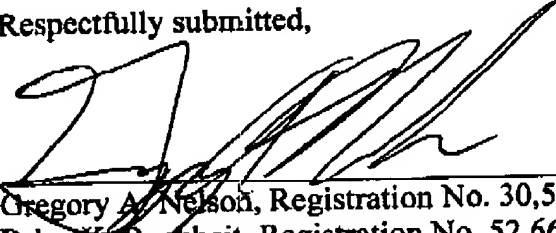
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Should the Examiner disagree that the Application is in an allowable state, however, the Applicants request clarification on a number of matters present in the Office Action, to which Applicants cannot fully respond for various reasons. Specifically, Applicants request a clarification for art that supports the Officially Noticed propositions. Applicants further request that the Examiner clarify the basis for the rejections to claims 6, 9, 10, 16, 19 and 20. Additionally, Applicants note that Brown is apparently improperly referenced against claims 3, 4, 13, and 14 and request a clarification as to this matter.

Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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